Ladies and Gentlemen of the FCC,

I wish to respectfully submit the following comments regarding BPL:

1. Need

There is no real need for BPL, especially in light of the almost certain damage it will cause to users of the HF spectrum, including the institution of Amateur Radio. I live in a rural area in Medina County, TX and have no less than three options for internet access: 1) dial up, 2) a broadband satellite service, and 3) a 2.4 GHz local broadband service. I chose the satellite service (Direcway) and have excellent, broadband internet access that poses no interference to or from any other service. These services are available virtually everywhere and do not conflict with radio services.

2. Radiation from power lines

The power lines were designed to act as efficient transmission lines for low frequencies only. Radiation losses increase dramatically as line separation becomes even a small fraction of a wavelength. At the frequencies proposed for use with BPL (HF and low VHF) the power lines will constitute a very poor and leaky transmission line, causing both undesirable radiation of wideband noise and susceptibility to interference from radio transmitters. Technically, BPL is a bad idea.

3. Damage to Amateur Radio and Education

The Commission seems to have turned a blind eye to the damage to Amateur Radio and education BPL will cause. I am an Institute Scientist with Southwest Research Institute and owe my career in science to ham radio. I was licensed as WN5FRF at the age of 12 and the hobby fostered a lifelong interest in science. Many other scientists, engineers, and astronomers got their start the same way. If the curious and intriguing sounds of natural ionospheric activity are replaced with the grating sound of high-speed data transfer and weak signal detection is obliterated, radio will lose most of its attraction for everyone. One of the prime motivators to encourage young people to enter science will be lost forever. Polluting the HF radio spectrum with wideband noise can be compared to dumping used engine oil into the ocean.

The radiation aspect of BPL is only half the problem. Ingress is the other half. Even a modest amateur radio station could easily wipe out an entire block of internet access provided by BPL. Agreed, the part 15 rules state that BPL must accept this interference, but history has shown that the general public neither understands nor accepts the distinction. An amateur causing internet interference, even though it will be completely legal to operate his/her station, will be ostracized from the neighborhood and treated as a pariah.

4. Legal remedies

If the HF spectrum is trashed from BPL then I foresee the eruption of one or more class action lawsuits. Many amateurs have a lot of money invested in radio equipment and antennas. If they become useless due to an unacceptable rise in the noise floor caused by

BPL then they will seek compensation. In addition to the direct loss of their investment in equipment, they would seek significant punitive damages for the loss of a lifelong hobby. Because amateur radio is used to assist educating young science enthusiasts, the damage to education will come into play as well. There are many hams that have already expressed an interest in pursuing such a lawsuit, making the total damages sought a huge sum. The targets of the lawsuit would be the companies responsible for promoting and implementing BPL. There is a very good chance the companies could either be sued out of existence or made to take the system down. It probably would not be difficult to prove that they either did not perform adequate analyses regarding the amount of broadband power they would radiate or that they, in fact, knew but concealed the facts from the public and the FCC. Anybody with access to a NEC antenna program can calculate the radiation efficiency of the power line structure once the excitation details are known. It has been reported that they plan to put up repeaters every quarter mile or so along the power line. Surely, only a part of this is to supply signal to the users. The rest is to make up for radiation losses - the very losses they claim not to have.

It would be interesting to calculate the total level of radiated power summed across a city or the nation. It may well exceed the power the Voice of America uses to broadcast to the world. And the worst part of it all is that the energy is radiated in the frequency band capable of widespread ionospheric propagation. Therefore, even distant users of the HF spectrum will be affected.

5. Summary

In conclusion, BPL is not needed. There are alternate broadband services available that do not pollute the spectrum nor cause damage to existing services. Using power lines as transmission lines for high frequency signals is very poor engineering practice because the line spacing is far too great to comprise an efficient transmission line. The resulting leakage into and out of the lines will cause unwanted radiation and susceptibility to interference. This has far reaching implications to all users of the HF and low VHF spectrum, including the demise of amateur radio. This would be a serious blow to emergency communications and to education.